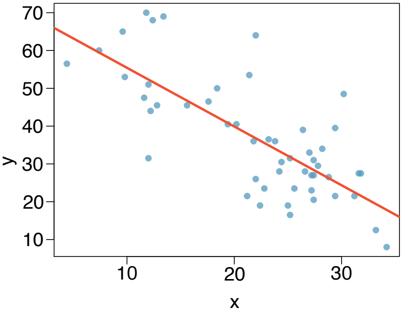
Regression

Lab 7

Linear Regression

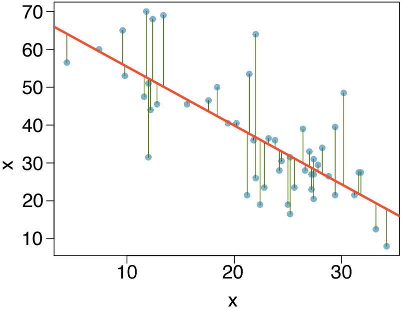
We have a data set

x	10	15	20	16	...
y	20	35	80	67	...



We want to compute the equation of the line $\hat{y} = m \cdot x + b$

Finding the error



$$Error(m, b) = \frac{1}{n} \sum_{i=1}^{n} [y_i - (mx_i + b)]^2$$

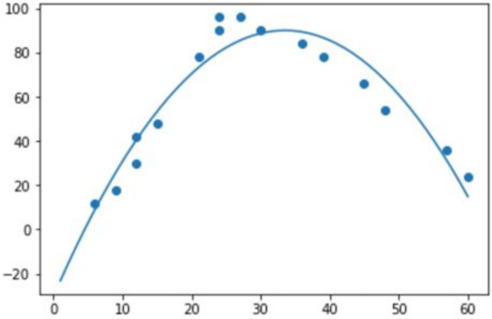
Method

Minimizing the error

- Gradient Descent

- $\nabla Error(m, b) = 0$

Quadratic Regression



$$Error(m, b, c) = \frac{1}{n}\sum_{i=1}^{n}[y_i - (mx_i^2 + bx_i + c)]^2$$